

**ABSTRACT****CHEMICAL MECHANICAL POLISHING THICKNESS CONTROL IN MAGNETIC  
HEAD FABRICATION**

The method for controlling the depth of polishing during a CMP process involves the  
5 deposition of a polishing stop layer at an appropriate point in the device fabrication process. The  
stop layer is comprised of a substance that is substantially more resistant to polishing with a  
particular polishing slurry that is utilized in the CMP process than a polishable material layer.  
Preferred stop layer materials of the present invention are tantalum and diamond-like carbon  
(DLC), and the polishable layer may consist of alumina. In one embodiment of the present  
10 invention the stop layer is deposited directly onto the top surface of components to be protected  
during the CMP process. A polishable layer is thereafter deposited upon the stop layer, and the  
CMP polishing step removes the polishable material layer down to the portions of the stop layer  
that are deposited upon the top surfaces of the components. The stop layer is thereafter removed  
from the top surface of the components. In this embodiment, the fabricated height of the  
15 components is preserved.